Leading the Way:
Profile of an Early DMS Deployer
Ken Glassman and the Illinois Tollway

For the Illinois State Highway Toll Authority, 1999 signaled its first foray into the world of Dynamic Message Signs (DMSs) based on ITS standards. Ken Glassman believed that DMS standards would start the agency off on the right foot. We'll learn how DMS standards established the foundation for the Tollway's growing incident management program and how they will help pave the way for future ITS projects.

What convinced you to use ITS standards when deploying your DMS devices?
The Tollway's goal was to procure, install, and operate Dynamic Message Signs as an element of its future Traffic and Incident Management System (TIMS). Knowing the potential for procuring DMSs from multiple manufacturers, we thought it was critical to standardize the interfaces that would ensure basic compatibility. We believed that ITS standards would satisfy this need.

Did you have to convince others in your agency that standards were a good idea?
Deciding to use proprietary systems versus ITS standards was the real issue. Once the decision to be compatible with other agencies within the Gary-Chicago-Milwaukee (GCM) Corridor was made, opting for ITS standards was the intelligent choice.

The use of ITS standards should make future procurements easier and contribute to a more effective design of the Tollway's TIMS Project.
-Ken Glassman

Tell me about your experiences working with DMS standards. What aspects were particularly positive or negative?
Because of limited experience in the ITS standards area, the Tollway relied on its traffic consultant to develop an ITS standard for DMS. The quick response by the consultant allowed the Tollway to move forward with its initial procurement of DMSs from multiple manufacturers. During the initial stages of development each manufacturer worked with the Tollway in a very constructive fashion.

At the same time, the development of the ITS standards for DMS was in its infancy stage. As such, we found a number of incompatibilities between the interfaces for each manufacturer's DMSs. We learned that the provision of a standard data structure and the physical interface compatibility did not guarantee interoperability among different manufacturers' DMSs. Rather, to ensure a greater opportunity for interoperability, the ITS standards should have provided specific definitions with respect to various objects, such as exact levels of illumination, definition of sign message identification formats, and definition of various fonts. As a result, the Tollway did not achieve the level of interoperability that it envisioned. This was not viewed as a setback, however, just growing pains.

What parts of the deployment process were simplified by using DMS standards? What parts were made more difficult?
Acceptance testing of the DMSs was simplified through the use of DMS standards. Both manufacturers' signs were tested utilizing the same testing standards. The manufacturers not only had to verify that their DMSs were meeting the specifications of the standards, but also that their communications were meeting the Tollway's basic requirements. Perhaps this factor caused the manufacturers to work a bit harder to make sure the Tollway was satisfied with their respective product.

What was staff's biggest challenge in working with DMS standards? How did your agency address those challenges?
As stated previously, because of the limited resources in the ITS area, the Tollway relied on its traffic consultant to develop an ITS standard for DMS. In addition, the Tollway relied on its consulting engineer for the related communications design. Working hand-in-hand with consultants throughout the deployment process has increased the Tollway's in-house ITS capabilities and its ability to manage future ITS projects.

Did ITS activities at other regional transportation agencies weigh into your decision to use DMS standards?
During the Tollway's initial deployment of DMSs, various regional agencies in the GCM Corridor were also developing Traffic Management Systems. We thought that if a regional transportation system were to exist and be functional, it would be reasonable for some elements of each agency's management system to be compatible. After discussions with colleagues at the Illinois Department of Transportation (IDOT) and considering the Tollway's desire to procure DMSs from multiple manufacturers, the decision to use ITS standards was much easier.

Ken Glassman

Ken has served in various capacities at the Tollway since 1984, beginning as Assistant Foreman for Roadway Maintenance (1984), Foreman for the Sign Shop (1986), and Traffic Operations Supervisor (since 1992). He is currently serving as Project Manager for the TIMS Project.

Ken has a business degree from Elmhurst College and a M.B.A. from North Central College.

What benefits do you anticipate from your decision to use DMS standards?
The use of DMS standards should make the procurement process smoother in the future. It should be easier to specify requirements and "open the door" for plug-and-play procurements. The use of ITS standards is leading to a more effective design of the Tollway's TIMS project. A primary objective of the TIMS is to provide the Tollway's customers with real-time information that will enable them to make smart travel decisions. ITS standards get us closer to achieving that goal.

Have you received feedback from your customers related to your DMSs?
Feedback received by the Tollway from its customers has been both positive and negative. All feedback has been message content related. It is imperative that messages generated by the Tollway be timely and easily understood by any motorist. To that end, the Tollway has been working with other agency members of the GCM Corridor to develop common, standardized sign messages for the region. It is important that an alert posted on a DMS in Chicago mean the same thing to a driver from Milwaukee, and vice versa.

For your colleagues who might be on the fence about using ITS standards, what is the strongest argument you can think of for using standards sooner rather than later?
The use of ITS standards was about increasing compatibility and interoperability among different vendor products. Incorporating ITS standards into design specifications now should reduce costs to an agency when it updates its systems in the future.